



BAYTRONICS
CORPORATION

HULL ELECTRONICS COMPANY

7563 CONVOY COURT, SAN DIEGO,
CALIFORNIA 92111 (714) 278-6140

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OAKLAND, CALIF.
REC'D. ON ABOVE DATE

March 1, 1980

SERVICE BULLETIN

1-30-80

MODEL 922 - ANTENNA COUPLER MODIFICATION

To reduce the chances of arcing in the antenna coupler section of the Model 922, a shorting link is being installed on the antenna loading coil. The effect of this link is to break up a self resonance that can occur in the coil at the higher frequencies.

When loading the set to channels near 2.0 MHz, it may be necessary to locate the loading tap at a point to the left of the shorting link. In this case, we recommend that the shorting link be moved to a point nearer the left end of the coil so that it is not in the portion of the coil that is being used on any channel.

When a radio is programmed with more than one channel in the same band in the 4 to 8 MHz range, frequently the taps on the coil fall on the same turn. If there are several channels in the same band, the physical problem of placing three taps on the same turn arises. Consequently, when a radio is programmed at the factory under the above conditions, only one coupler tap will be brought out from the switch wafer. The channels in the same band will be bussed together at the wafer. The tap will be identified by all the channel numbers involved, and the taps removed from the wafer will be shipped with the radio. This will decrease the amount of time required for coupler tuning.

The following applies to 421, which requires addition of a shielded lead between the external unit and the antenna in the antenna section. Any wiring running through the amplifier and coupler portion of the radio must be shielded cable. Ground the shield at both ends and at the point where the wire passes from the antenna board section into the power amplifier section. This will prevent RF from getting back into the exciter via the antenna wiring.

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MODEL 922 - INSTALLATION AND SERVICE TIPS

ANTENNA INSTALLATION PROCEDURES

Many of today's technicians have never had an opportunity to become acquainted with 2 MHz and open-wire fed antennas. Ceramic bowl feed-thru and stand-off insulators must be used to get the lead-in wire from the antenna to the radio. Running the lead-in wire with other wires must be avoided.

"Antenna lead-in wire" is misleading -- the wire is actually a part of the antenna. Choose a mounting location that will permit getting the wire outside the pilot-house in the shortest possible distance. Tune-up will be easier and you will put out a much better signal.

RECEIVER AND TRANSMITTER INSTABILITY

Insure that there are 1 meg ohm resistors from the VCO and 10.7 MHz test points to ground. Radios with serial numbers beginning with 137 should be checked. The resistors are located on the bottom side of the exciter board, adjacent to the test points. If the resistors are not there, install two 1/2 watt carbon composition 1 meg ohm resistors.

The following applies to 922s which require addition of a distress tone generator or other external unit such as a speaker or microphone. Any wiring running through the amplifier and coupler portion of the radio must be shielded cable. Ground the shield at both ends and at the point where the wire passes from the exciter board section into the power amplifier section. This will prevent RF from getting back into the exciter via the additional wiring.

IC-6 AUDIO OUTPUT IC (SERIAL NUMBERS STARTING WITH 137 OR 139)

SYMPTOM: No audio, IC-6 hot to touch

CURE: Change C-157 to a .01 mf capacitor and C-158 to a .002 mf capacitor.



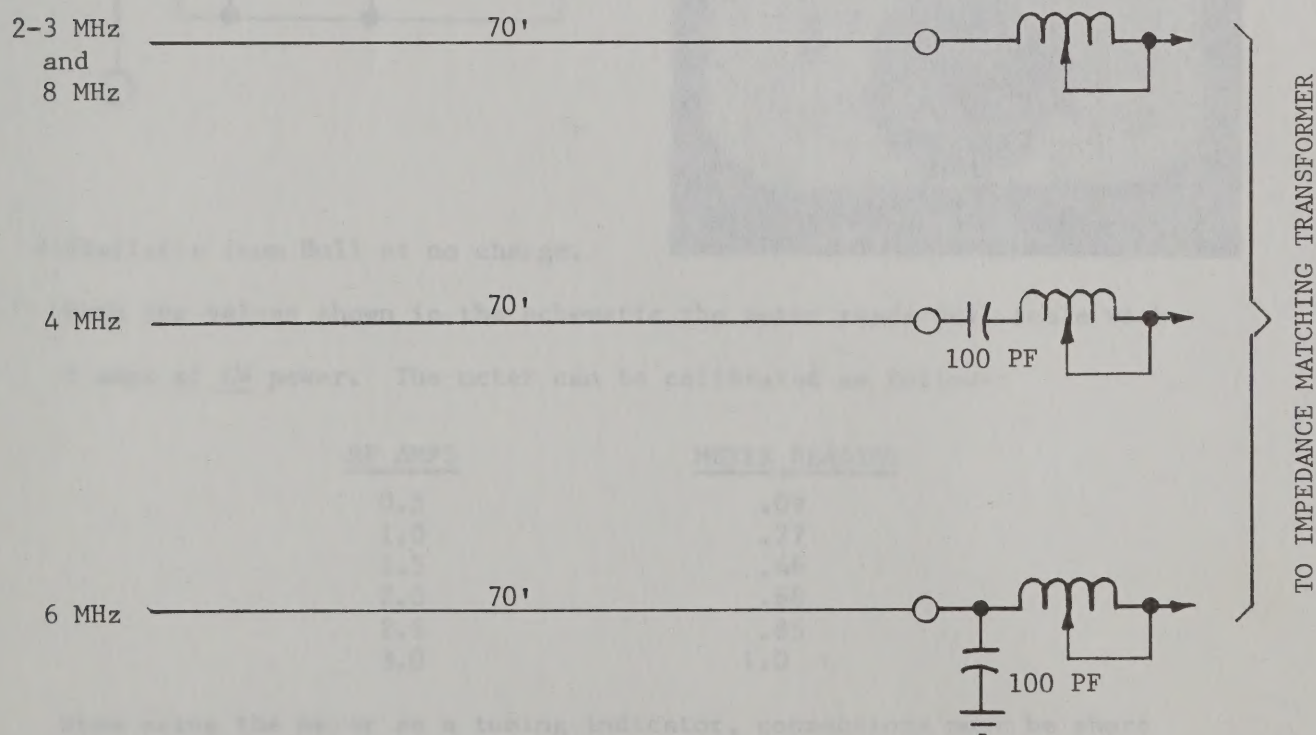
A SIMPLE SSB ANTENNA FOR THE LOWER FREQUENCY BANDS

For those vessels where it can be erected, a 70 foot "long wire" antenna offers some important advantages when compared to the usual short whip. Consider these good points:

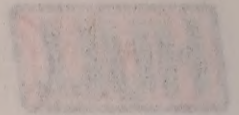
1. High radiation resistance. This means the system works well even with mediocre grounds. It also means less critical tuning (and practically no detuning when outriggers are moved).
2. Easy installation
3. Low cost

HOW IT WORKS

A 70 foot length of wire is a quarter wavelength long at about 3.3 MHz. It appears roughly as a half wavelength at 6.2 MHz and as slightly less than 3/4 wavelength at 8 MHz. Circuits for matching the antenna to a typical SSB transmitter are shown below:



NOTE: This antenna will show little or no current when being tuned to 6 MHz since the impedance is very high at this frequency. Correct tuning is indicated when the transmitter D.C. current rises to the manufacturer's specified amount. A field-strength meter can also serve as a tuning indicator.



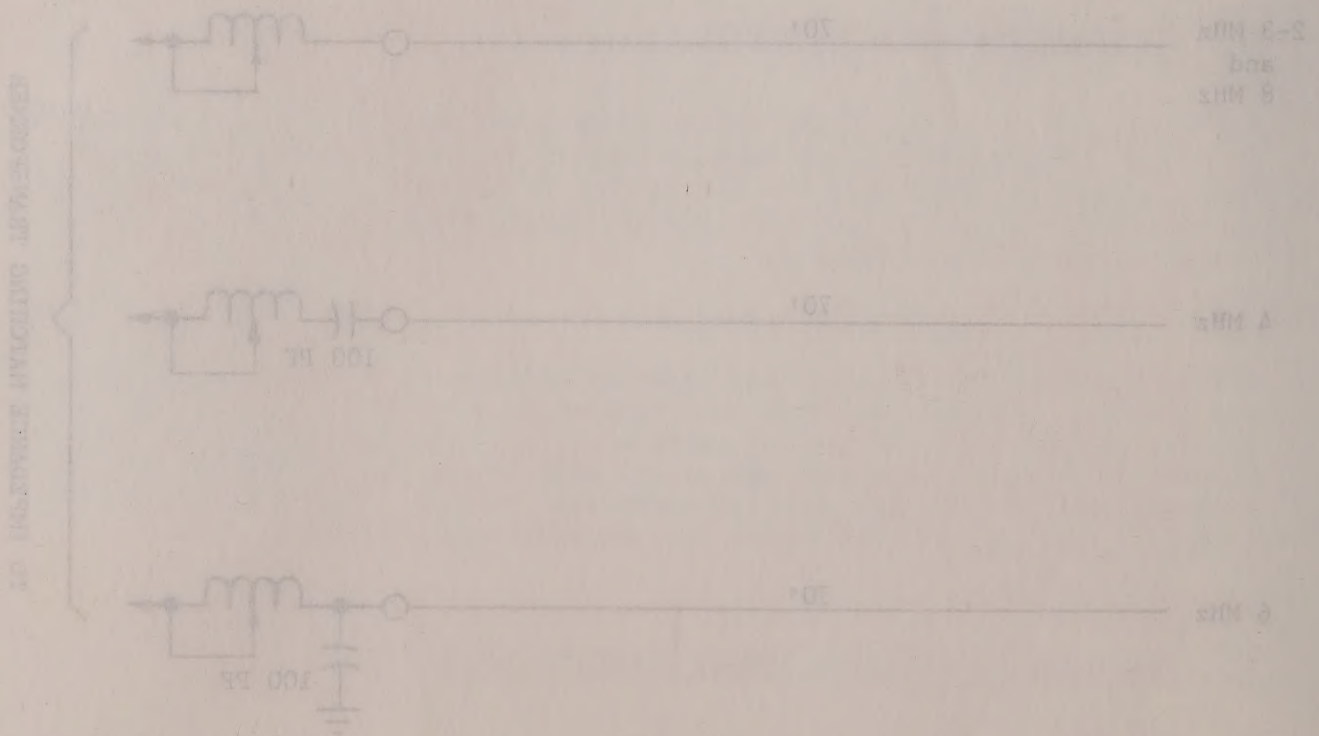
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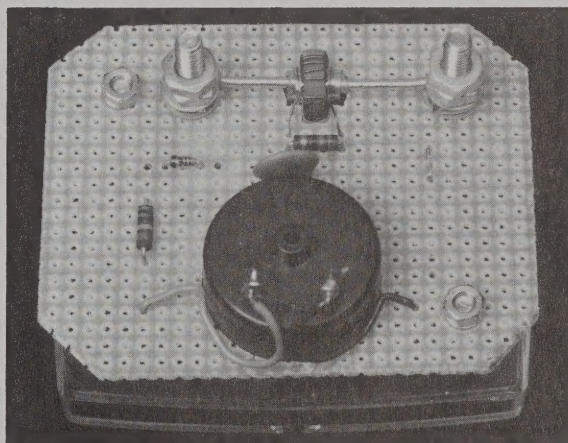
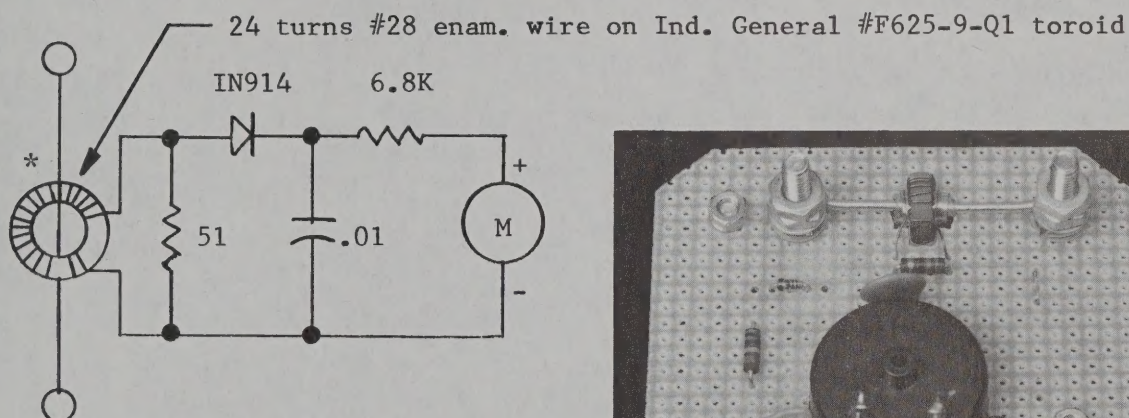


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Here's how you can modify any 0-1 ma. panel meter to read R-F current.

The photo shows a suggested construction for use with a Radio Shack 0-1 ma. panel meter, catalog no. 270-1752. The schematic is shown below.

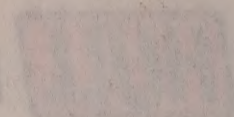


* Available from Hull at no charge.

With the values shown in the schematic the meter reads full scale with 3 amps of CW power. The meter can be calibrated as follows:

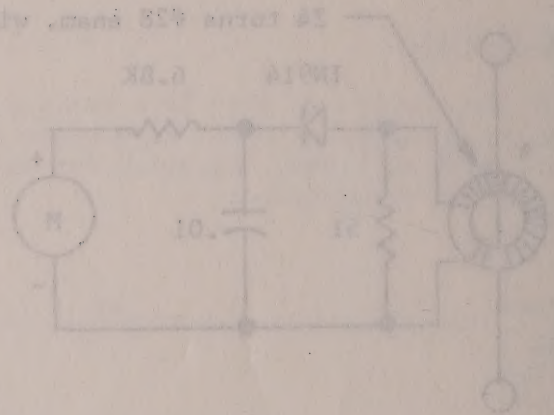
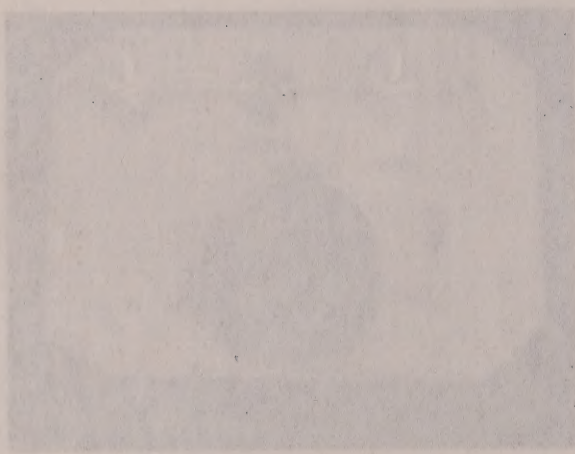
<u>RF AMPS</u>	<u>METER READING</u>
0.5	.09
1.0	.27
1.5	.46
2.0	.68
2.5	.85
3.0	1.0

When using the meter as a tuning indicator, connections must be short and direct to avoid a detuning effect when the meter is removed from the circuit.



Here's how you can modify any 0-1 ma. panel meter to read 0-1 ampere.
The photo shows a suggested construction for use with a Radio Shack 0-1
ma. panel meter, catalog no. 170-1752. The schematic is shown below.

14 turns #18 enam. wire on Ind. General #1515-0-01 core



* Available from Kull at no charge.

With the values shown in the schematic the meter reads full scale with
5 amps of CW power. The meter can be calibrated as follows:

57 AMPS	METER READING
0.2	0.09
1.0	0.45
1.5	0.68
2.0	0.91
2.5	1.14
3.0	1.37

When using the meter as a tuning indicator, connections must be short
and direct to avoid a detuning effect when the meter is removed from
the circuit.